

Rethinking academic practices: Meeting some challenges of online delivery

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Abstract

Online delivery of education is both similar to and different from what has gone before. From the perspective of dealing with students remote from the campus, online education can be viewed as an extension or variation of distance education delivered through print and other media. However, unlike traditional distance education, the online medium permits frequent and immediate interaction among students and teachers. This lends it some of the qualities of face-to-face teaching. Depending upon whether an institution is making the transition to online teaching from face-to-face or traditional distance mode the challenges to be faced may differ. This paper considers some of those challenges and alternative ways of addressing them.

Introduction

The context of discussion for this paper is that of a regional Australian university with a significant distance education profile. The University opened as an institute of technology in 1967 and became a university in 1992. During its period as a College of Advanced Education the university established a strong tradition in distance education at both undergraduate and graduate levels. It currently enrolls approximately 20 000 students of whom more than two-thirds study in distance mode with around 4 000 of these being outside Australia. Its leadership in distance education is recognised both nationally and internationally and it has been the recipient of international awards for excellence in distance delivery.

Prior to 1996, the university's distance education degree programs were delivered almost exclusively via print using audio-visual, CMC and telephone tutorial support. Since 1996, the university has moved increasingly to online delivery for its graduate programs and in 1999 it embarked upon an ambitious partnership to expand online offerings across a large part of its curriculum.

The university would not claim to have definitive answers to all (or even any) of the challenges inherent in online delivery. However, its experience in distance education, its early entry into online offerings and its recent substantial expansion of that offering to over 70 units of study available entirely online do provide a unique perspective on those challenges. It is against that background that this paper is written. This paper also draws substantially for its theoretical framework upon previously published work (McLendon & Cronk, 1999).

The Evolution of Online Education

Many, if not most, universities are developing approaches to online education. However, they may be commencing from significantly different perspectives.

Taking a course from traditional face-to-face delivery into the online medium typically entails the packaging of course materials into formats that can be efficiently delivered online.

The extent to which the face-to-face delivery has been dependent upon direct interaction between staff and students and the amount of text and other materials that are already prepared for distribution to students will vary. These factors will have a significant influence on the effort required to prepare for online delivery since there is likely to be a greater need for structuring of online materials according to principles of instructional design than when the same content is dealt with in face-to-face mode.

Distance education courses have already been through a process of instructional design and have materials packaged for delivery in various media. Materials will require conversion. For example, text may be rendered as HTML or PDF rather than on paper and audio and video will require digitizing and compression into formats suitable for web delivery. The effort involved in converting properly designed distance materials for online use will typically be less than that required to convert materials intended for use solely in the context of face-to-face delivery. However, the transition from distance to online education brings its own challenges, especially in relation to the increased opportunity for direct interaction between students and between students and staff.

In order to appreciate the challenges inherent in the transition from "traditional" distance education to online education it is helpful to establish some perspective upon the development of distance education. Taylor (1996) has described the evolution of distance education in terms of four generations of delivery technologies with distinctive characteristics. The framework developed in that paper affords a useful background to the discussion in this paper and is reproduced in outline in Table 1.

Table 1 Models of Distance Education: A Conceptual Framework

Models of Distance Education and Associated Delivery Technologies	Characteristics of Delivery Technologies				
	Flexibility			Highly Refined Materials	Advanced Interactive Delivery
	Time	Place	Pace		
First Generation: The Correspondence Model Print	Yes	Yes	Yes	Yes	No
Second Generation: The Multi-media Model Print	Yes	Yes	Yes	Yes	No
Audiotape	Yes	Yes	Yes	Yes	No
Videotape	Yes	Yes	Yes	Yes	No
Computer-based learning (CAL, CML)	Yes	Yes	Yes	Yes	Yes
Interactive video (disk and tape)	Yes	Yes	Yes	Yes	Yes
Third Generation: The Telelearning Model Audio teleconferencing	No	No	No	No	Yes
Videoconferencing	No	No	No	No	Yes
Audiographic communication	No	No	No	Yes	Yes
Broadcast TV/Radio + Audio teleconferencing	No	No	No	Yes	Yes
Fourth Generation: The Flexible Learning Model • Interactive multimedia (IMM)	Yes	Yes	Yes	Yes	Yes
• Internet-based access to WWW resources	Yes	Yes	Yes	Yes	Yes
• Computer mediated communication	Yes	Yes	Yes	No	Yes

Without debating the validity of Taylor's claims about the characteristics of various technologies there are some issues that his framework brings into view.

Firstly, the delivery generations are not necessarily linear, exclusive or discrete. A provider of distance education programs may be operating across more than one generation at any given time. For example, in terms of delivery technologies, the university under consideration in this paper currently operates across all four generations.

Although the number of programs characterised by fourth generation delivery is increasingly significant, at this time, degree programs operating across the first three generations continue to account for the bulk of its distance education programs.

Secondly, the framework outlined in Table 1, while valid for the purpose of describing the inherent technology characteristics of distance education delivery, focuses only on that particular aspect of implementing distance education programs in tertiary institutions. What the framework in Table 1 does not consider (nor makes any claim to do so) are other contextual issues which impact on the effectiveness and efficiency of distance education programs, irrespective of the delivery model utilised.

Thirdly, many of the delivery technologies in Taylor's framework are noted as providing "highly refined materials". The professionally produced booklets, audio, video and other materials are dependent upon the existence of specialised facilities and personnel and require considerable time in production. Lead times for preparation of distance education materials are typically considerable with, for example, teaching staff being required to have content for use by students in February delivered to the production facility in July of the previous year. Moreover, all materials for a semester unit are typically delivered in one package at the beginning of semester. This is in stark contrast to practices typical of face-to-face teaching where what is delivered to students from week to week may be dependent upon the experience of the previous week.

Additional background

Gellman-Danley & Fetzner (1998) and Berge (1998) identify and discuss a range of contextual issues arising from teaching online programs. These authors conclude there is a need to examine current academic, governance, technical, cultural, legal, labour-management and fiscal practices as universities increasingly move to online education.

Numerous articles and documents have been written about the management of distance education. The International Centre for Distance Learning (ICDL) Distance Education Library and the Educational Resources Information Center (ERIC) alone contain hundreds of such documents. Most of these documents, however, examine distance education policy, institutional management, student support systems and student administration relevant to the first three generations of distance education delivery models. Surprisingly little appears to have been written about the academic management and administration of what Taylor (1996) labels as fourth generation delivery of distance education.

Taylor suggests that as distance education moves towards later generations of delivery the primary benefits for learners are flexibility of access and increased student control over their learning. "In effect, these 'flexible access' (1992) technologies have the potential to allow the student to access learning at will, as lifestyle permits... Such flexibility has a major pedagogical benefit - it allows students to progress at their own pace. Thus varying rates of individual progression can be accommodated, unlike typical conventional education practices..." (Taylor, 1996:3). Implicit in this potential for flexible rates of progress by students is the challenge to adapt administrative and other systems to accommodate such flexibility.

An editorial by Michael Moore in the American Journal of Distance Education asked, "What are the barriers to the adoption of distance education?" In his commentary, he suggest that in higher education, part of the answer is that many of the administrative systems were originally designed to service traditional students taught by traditional teachers. He goes on to say that these traditional administration systems now constitute a barrier to the adoption of distance education. Moore (1994:4) recognised this in writing "...the barriers impeding the development of distance education are not technological, nor even pedagogical.

We have plenty of technology, and we have a fair knowledge about how to use it. The major problems are associated with the organizational change, change of faculty roles, and change in administrative structures. Here we desperately need all the ideas and all the leadership than can be assembled. The starting point is to expose the problems".

To the extent that online education resembles distance education, universities that have adapted to distance education should be advantaged in the process of establishing effective systems for online education. However, to the degree that online education differs significantly from "traditional" distance education there may be significant structural barriers to a smooth transition from distance education to online delivery.

Issues Emerging from Experience

Our experience has been consistent with that described by Gellman-Danley & Fetzner (1998) and Berge (1998). It seems that as each delivery generation evolves, there will be a requirement for teaching staff to adapt and extend their repertoire of instructional strategies/techniques and to develop the necessary technical skills required to maximise potential teaching/learning benefits offered by the new delivery technologies. As well, our experience suggests that the current concerted move towards online delivery of educational programs generates tensions, which seriously challenge the existing systems for academic program management and student learning support whether these are attuned to supporting face-to-face or distance education. Resolving these tensions is important if the maximum potential benefits of evolving online delivery technologies are to be captured. Academic managers must look 'outside the square' to develop more student-centred, rather than institution-centred policies for the administration of academic programs.

Our experience also suggests that as universities move to online program delivery, there will be increasing pressure for change to established teaching and learning practices. Paralleling these are pressures to significantly rethink policies and procedures governing the academic management and administration of distance education (and possibly on-campus) programs. Examples of the challenges arising from these trends and some approaches to their resolution have been described previously (McLendon & Cronk, 1999).

Challenges to Established Academic Practices

The issues raised in this paper have arisen in recent years in the context of teaching graduate programs (degrees and graduate certificates) which are offered exclusively in online mode and in the more recent conversion of traditional print-based distance materials for online delivery. While the issues have arisen in the particular context of a distance education university making the transition to online delivery it is likely that they have relevance other institutions undertaking the transition to online education.

The approach to discussing the selected issues is based upon that employed by McLendon and Cronk (1999). For each issue, existing university practices and the challenges generated by online delivery are briefly outlined. Although the brief descriptions will not attempt to embrace the full complexity of each issue they should be sufficient to indicate the general characteristics. Depending upon whether online education is being approached from an existing distance education model or from face-to-face teaching different ways of dealing with the issues might emerge naturally. We suggest three possible approaches to each set of challenges. Two are based on extension of existing practices in distance education or face-to-face teaching and the third attempts to synthesise an approach that is more attuned to the new mode of delivery which is inherent in online education.

At this point, we make no overt judgment about, or indicate a preference for any of the suggested solutions. We conclude by suggesting that if a tertiary institution wishes to maintain its reputation as a market leader in distance education there is little option as to which of the solutions it adopts (at least to these selected issues). We also maintain this will require a significant change to an institution's practices if those practices are to productively support the new delivery technologies.

a. Handling Student Inquiries

Established practice:

Distance education students seeking answers to queries about their study are encouraged to do so via a central outreach facility which is equipped to handle contact by telephone, facsimile and, more recently, electronic mail. Routine matters can often be resolved immediately by outreach staff referring to standard instructions supplied by teaching staff. Non-routine matters are referred to teaching staff who advise outreach when the student has been contacted and the matter resolved. A database maintained by outreach is used to ensure that all matters are resolved in a reasonable time. Major benefits of this system include rapid resolution of routine matters, assurance that students are serviced in a reasonable time, a reduction in the number of individual matters handled by teaching staff and capacity to deal effectively with occasional staff absences by redirecting inquiries.

Online challenge:

Compared to distance education in which student access to teaching staff is typically very much restricted by geography, online delivery greatly increases the opportunities for students to approach staff directly with questions using facilities such as electronic mail. Even on-campus students may find that electronic mail is a more convenient form of access than seeking a meeting during often restricted times for consultation. The challenge is to devise procedures that will afford students levels of service at least equivalent to those available to on-campus students without increasing the demand on lecturers' time beyond acceptable bounds.

Potential solutions:

Require all student contact with staff members to be directed to a central outreach facility which will deal effectively with routine matters and ensure that non-routine matters are dealt with in a timely fashion.

Allow students unrestricted access to staff via electronic mail and encourage staff to adopt time efficient procedures such as scheduled sessions for dealing with electronic mail, use of standard responses and development of FAQ lists towards which students may be directed.

For each unit of study establish an e-mail address which will route student inquiries via the central outreach facility. In addition assist staff to develop effective e-mail filters which assist them in taking advantage of the central service while maintaining students' sense of direct contact with the responsible person.

b. Balancing Individual Progress and Group Process

Established practice:

Traditional distance education has tended to focus on the delivery of materials and dealing with the interchanges between the teacher and individual students. There has typically been scant opportunity for students who may be widely separated by geography to interact with each other. The instructional design of distance materials has reflected this reality and has seldom required that students do more than interact with the materials and occasionally with the lecturer except when courses have included residential schools which bring students together at some point. Even the latter has often been restricted to what is required for assessment purposes because of the time required for standard forms of correspondence and the expense of long distance telephone calls. By contrast, on-campus courses often use student interaction as a key element in teaching and learning and there is a good deal more informal interaction, some of which is related to the learning experience.

Online challenge:

Perhaps the greatest difference between traditional distance education and the online medium is the potential for staff-student and student-student interaction. If the interaction is to pass beyond the merely social (which has its own value) and assume educational significance then it is generally desirable for the participants to be dealing with the same elements of the course. The challenge is to balance this need for a group to be progressing together with the capacity of online materials to support students moving at different rates through the material.

Potential solutions:

Deal with online interaction in a style similar to the use of residential schools in traditional distance education. Students would be encouraged (or required) to engage in interactions with other students at critical points such as the beginning or end of the study period for introductory or summary purposes respectively or at other times

when particular value is discerned. At other times students would be free to progress at their own pace and interact or not as they choose.

Require students to participate in interactions at specified times throughout the unit of study. Depending upon the nature of the unit of study, the form of interaction might range from posting comments about study materials in online discussion groups to engaging in cooperative projects with group assessment.

Initiate interaction among students at the beginning of the period of study and attempt to establish a supportive environment in which students are able to interact to increase their understanding of the material. Where cooperative activities form part of the learning and assessment package negotiate the composition of student groups with a view to ensuring that members are able to meet the same timelines.

c. Recapturing Responsiveness in Teaching

Established practice:

The development of distance education materials typically involves a lengthy period entailing instructional design, preparation of content and production of the actual materials. From initial planning to delivery may involve a year or more. The intent is to ensure that the resultant materials are of high quality and are available in their entirety at the beginning of the period of study. This is in marked contrast to face-to-face delivery where, although planning may occur well in advance, it is possible to delay the production of materials until they are required. Indeed, the delivery of a lecture may be modified on the spot to accommodate the reaction of students and the materials to be used in a subsequent week may be redesigned on the basis of feedback.

Online challenge:

Similarly to traditional distance education materials, online education involves the creation of artefacts which may be viewed by students and other audiences as indicators of the quality of the educational experience on offer. Thus it is imperative that the published materials be both of high quality and available when required. In the traditional distance education system this has been achieved by careful design and production which involves extended timelines.

At the same time, the online world is identified with currency of information and rapid response to change. Face-to-face teaching affords the opportunity for lecturers to incorporate mention of relevant current events and to adapt materials and processes in response to student needs. In contrast to more traditional distance education, online education affords similar opportunities for responsiveness. The challenge is to manage the balance between providing high quality materials and responding dynamically during the teaching period.

Potential solutions:

- Maintain and develop the design and production processes used in distance education to ensure that online materials are of a consistently high standard. Use e-mail, discussion lists and announcement facilities to effect minor adjustments in response to matters arising during a teaching period with significant changes incorporated into the next production cycle.
- Assign responsibility for development of online materials to teaching staff who will prepare and deliver materials using schedules similar to those used for face-to-face teaching.
- Provide design and development support to teaching staff to enable them to prepare and mount high quality online materials. Locating materials development closer to the teaching should enable the development cycle to be shortened and for materials to be prepared and mounted closer to the time of use.

d. Grading Assignment Submissions

Established practice:

The majority of assignments are word processed documents. Students are supplied with assignment covers and self-adhesive labels which positively identify the student, the unit of study and the assessment item.

Assignments arriving at the university do so via a central mailing room which logs their arrival in a database before distributing them to the staff responsible for each unit. Marked assignments are returned to the mailing room where they are logged and the marks recorded before they are returned to students. Paper-based

assignments require no special equipment or software for reading. Feedback for students is recorded on the assignments themselves or on printed sheets that are returned with the assignments.

Online challenge:

The challenge for online education is to develop effective systems for receiving, recording, grading, annotating and returning assignments. Particular difficulties lie in the variety of file formats that might be used for submitting assignments, the reluctance of many computer users to read large amounts of text from a screen and the lack of simple methods for annotating student work with feedback. Where files are printed for marking or opened for annotation there is a risk that the content of the file will be disturbed and the possibility that what the marker sees will not be what the student intended.

Potential solutions:

- Develop a central submission system into which files are uploaded and recorded. Files can then be printed and distributed to staff using the existing procedures as described above. Marked assignments could be returned by standard mail or comments could be provided by electronic mail. In either case the return of assignment or feedback could be logged in a central database to maintain the equivalent standard of service.
- Files logged and recorded centrally could be collected electronically for marking. Feedback could be provided electronically by email and its transmission recorded in the central database. The task of the marker could be made easier if students use file formats (such as Microsoft Word) which have an annotation facility.
- Adopt as a standard for assignment submission a file format that preserves formatting and permits annotation without disturbance of the contents. One such format which is common and has the additional benefit of being compressed is Adobe Portable Document Format (PDF). Files should be submitted and recorded centrally and then routed to markers using a workflow management system that permits automatic tracking of the file location from receipt to return and dispatch.

Conclusion

This paper has sought to identify and address some challenges that arise in the process of moving towards online education whether from face-to-face mode or from other forms of distance education. Our experiences suggest that while the challenges that face institutions may differ they have as common ground the need to put aside practices which are maintained simply for tradition and grasp the new opportunities as they arise. The resulting online education will be different from both face-to-face and distance education but it should provide students and staff with more flexible and ultimately more satisfying educational opportunities.

With each of the issues discussed in this paper, the first listed potential solution is indicative of how existing distance education practices might be adapted to accommodate the online challenge with minimal disruption. Such a solution would allow a largely common approach to be adopted to handling continuing work in distance education and emerging work in online mode. Similarly the second potential solution represents a variation of the approaches commonly applied in face-to-face operations and would accommodate online activities with minimal disturbance to established practices.

The third potential solution in each set represents an attempt to 'think outside the square' and appropriate the benefits offered by a transition to online offerings. To adopt these or similar solutions would require radical rethinking of some existing institutional structures and procedures.

Only when this is accomplished will institutions of higher learning be as open and flexible as their public assertions regarding online delivery maintain. Paul (1998:124) comments on this in writing "... if our institutions are to be as open as we say they are (and it does not take very much insight to recognise that they are not), management too must be open and driven by the same values which are represented in the organisation's mission statements and strategic plans".

In brief, this paper has attempted to explore some of the challenges (and opportunities) that traditional academic practices impose on the new delivery technologies. Admittedly, discussion in this paper represents a limited selection of practices which online delivery experience has thus far highlighted.

In 1976, Perry the first Vice-Chancellor of the Open University in the United Kingdom, reported on the intense scepticism he faced from traditional university academics in establishing the Open University (Rumble, 1992). Perry maintained the only way forward was to establish an entirely new single-mode institution dedicated to distance learning, an institution able to determine its own rules and regulations.

It is interesting to note that in 1999, the current Vice-Chancellor of the Open University in The United Kingdom, in discussing the ways in which universities can respond to the opportunities presented by new technologies, reinforces the importance of academic rules and regulations appropriate to online delivery. Daniel (1999:5) in discussing this issue makes the following distinction between hard and soft technologies. "Hard technologies are bits and bytes, electrons and pixels, satellites and search engines. Soft technologies are processes, approaches, sets of rules and models of organisations". He then concludes, "...that if you want to use the hard technologies for university teaching and learning (in a way) that is both intellectually powerful and competitively cost effective you must concentrate on getting the soft technologies right".

This is essentially the point being made in this paper. If institutions are to capture the maximum benefits of online delivery technologies, additional work must be done in critically and strategically examining existing academic practices for the teaching of online programs.

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